

Ownership and leasehold interest information for both surface and coal within and adjacent to the permit area is contained in Appendix I-2, attached to this chapter. Plate III, as indicated previously in this chapter, shows ownership and lease boundary information at a scale of 1"=500'.

Appendix I-3 contains a detailed listing of current, previous and pending coal mining related permits in the United States held, or applied for, by Consol.

UMC 782.14

Consol, their subsidiaries and affiliates, and persons controlled by or under common control with Consol have not had any federal or state mining permits suspended or revoked nor any mining bonds or similar securities deposited in lieu of bond forfeited in the previous five (5) years.

Information on all violations received by Consol, during the past three (3) years, related to environmental requirements are contained in Appendix I-4.

UMC 782.15

Right of entry and operation is based on surface or subsurface ownership by Consol or on lease agreements. A detailed description of these documents is provided in Appendix I-2.

There will not be any surface mining of coal at the Emery Mine during the five (5) year term of this permit renewal.

UMC 782.16

The permit area, shown on Plate III-9 (Permit Boundaries and Bonding Map Exhibit D), including areas depicted as full extraction (planned subsidence) on Plate V-5 (Subsidence Monitoring Points and Buffer Zones) do not contain any of the following areas designated as unsuitable for mining:

- National Park System
- National Wildlife Refuge System
- National System of Trails
- National Wilderness Preservation System
- Wild and Scenic Rivers System
- National Recreation Areas
- National Forests
- Public Parks
- Public places included on the National Register of Historic Places.
- Public Buildings, Schools, Churches, Cemeteries, Community or Institutional Buildings.

The permit area contains one dwelling that is occupied intermittently (located in Sec. 30, Twp. 22S, R6E) and several public roads (shown on Plate III). These will not be affected by the underground mining operation. Surface operations will not be conducted within 300 feet of the dwelling. Protection of land surface features is discussed in Chapter V.

Revised 8-31-95
Revised 5/07

File in:

- ☐ Confidential
- ☐ Shelf

☒ Expandable

Refer to Record No. 0057 Date 5/31/07
In C/O/S/O/S, 2007, Incoming
For additional information

CHAPTER V

GEOLOGY AND SUBSIDENCE

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If subsidence should materially damage, reduce the value, or alter the usage of surface lands and structures, Consol intends to do the following:

1. If subsidence attributed to mining operations has materially damaged a significant structure or reduced its value, or if surface lands have been reduced in value or the current and potential usage altered, Consol will mitigate the damage in accordance with R645-301-525.500. . With respect to areas designated as full extraction as noted on Plate V-5, the surface effects of subsidence over these areas is expected to be mostly surface tension cracks, and depressions. These cracks and depressions may be adequately mitigated by backfilling and grading. However, in the event such efforts are deemed inadequate or are unsuccessful, other technologically and economically feasible mitigation methods will be implemented in consultation with the Utah Division of Oil, Gas and Mining. If the planned subsidence does not pose a safety hazard, does not adversely impact the foreseeable use, and no diminution of value has occurred, Consol in consultation with the surface owner of record and DOGM may leave the effects un-mitigated. Consol realizes that the mitigation of some areas would result in more surface effects than the actual subsidence. If it is decided to mitigate a site the ingress and egress path to the site will be left in a stable manner per the surface owners desires. The mitigation process will be performed in accordance with R645-301-731.530, R645-301-525.520 and R645-301-525.530 and may include, but are not limited to, the following, as outlined and expanded upon, in UMC 817.124 of the Permanent Regulatory Program:

(a) Restore, rehabilitate, or remove and replace, to the extent technologically and economically feasible, each materially damaged structure, feature or value.

(b) Purchase the damaged structure or feature (except structures or features owned by the person who conducts the underground coal mining activities) for its pre-subsidence fair market value. To the extent technically and economically feasible, restoration will be achieved within a reasonable period of time after the damage from subsidence has occurred. The issue of timing is discussed in the response to UMC 817.124.

(c) Compensate the owner of any surface structure that has been materially damaged by subsidence. This can be accomplished by purchasing a noncancellable insurance policy as described in UMC 817.124(b)(3).

(d) With regard to the waterline depicted on Plate V-4, Fig 1, Consol is the owner of the waterline from the town of Emery. Consol will ensure that there is a shut off valve upstream of any full extraction area (see Plate V-4, Fig 1). The waterline will be protected or isolated from the system prior to subsidence to ensure that there will not be a break in the line.

Revised 8/05

Revised 5/07

APPENDIX V-3

1980 Pre-subsidence Survey

Information in this appendix may have been superceded by the pre-subsidence survey contained in Appendix V-4. Please consult Appendix V-4 for additional information.

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See: Chapter XII, Appendix XII-2,
Vegetation and Wildlife Report for 1st North IBC (348 ac)

See: Chapter XIII, Appendix XIII-2,
Vegetation and Wildlife Report for Federal Lease Area (160 ac)
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Revised 10/2002
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ARCHAEOLOGICAL CONSULTANTS, 4th EAST EXTENSION AREA,
MARCH 2003

See: Chapter XII, Appendix XII-3, Cultural Resource Report (MOAC Report No. 05-177, May 23, 2005), for 1st North IBC Archeology

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Revised 9/2005
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CHAPTER V
APPENDIX V-4

**PRE-SUBSIDENCE SURVEY
PRIOR TO FULL EXTRACTION AT THE
14th AND 15th WEST PANELS**

Prepared for

CONSOLIDATION COAL COMPANY

Emery Mine
Emery County, Utah

April 2007

Prepared by

EARTHFAX ENGINEERING, INC.

Engineers/Scientists

Midvale, Utah

www.earthfax.com



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FIGURE 1. PRE-SUBSIDENCE SURVEY UPDATE 14th/15th WEST AREA

TABLE 1. PRE-SUBSIDENCE SURVEY POINTS

SITE PHOTOGRAPHS

SECTION 1

INTRODUCTION

The purpose of this report is to present baseline surface conditions prior to full extraction operations at the 14th West and 15th West Panels in the Consolidation Coal Company Emery Mine, Emery County, Utah. It is intended to be part of a Subsidence Control Plan as required in Section R645-301-525.100 of the Utah Administrative Code. Recording initial surface conditions will facilitate locating and mitigating any areas determined to be adversely affected by future subsidence. As part of the pre-subsidence survey, the locations and conditions of the following features were recorded:

- Structures (e.g. buildings, corrals, roads)
- Fences
- Utilities (e.g. power, telephone, gas, and water lines, water wells)
- Surface drainages (e.g. natural channels, irrigation ditches)

In addition, over 200 points located above the area scheduled for full extraction were surveyed by Ware Surveying, LLC to establish baseline topographic conditions.

This report references the original Pre-subsidence Survey performed prior to mining operations in 1980 (Valley Engineering, 1980). The feature numbers given in this document correspond to those described in the 1980 report. These features were surveyed in the field in April 2007, and any differences and/or changes from the conditions noted during the 1980 survey are noted both in the text and figures of this document. This report supercedes the Valley Engineering survey where conflicts exist.

CHAPTER 2

SURVEY AREA OBSERVATIONS

2.1 GENERAL AREA DESCRIPTION

This pre-subsidence survey covers approximately 132 acres, consisting of mostly undeveloped rangeland. Approximately 24 acres of the surveyed area are irrigated crop land. The structures in the area include a few small sheds and corrals and a cracked foundation, all of which are in fair to poor condition. There are several fences in the area in various states of repair. Most of the fences consist of barbed wire strung between posts made from natural rough cut tree limbs. Some fences use finished lumber fence posts or metal tee-stakes. A paved road traverses roughly south to north across the southeastern corner of the survey area. Unimproved roads stem from the paved road to the structures in the survey area. The drainages in the survey area are ephemeral, although some are directly fed by irrigation ditches and may flow intermittently throughout the year. All of the features (structures, fences, roads, drainages, utilities, etc.) located during the pre-subsidence survey are shown on Figure 1.

2.2 INDIVIDUAL FEATURE DESCRIPTIONS

Each numbered feature on Figure 1 is described below. The numbers for each feature are identical to those used in the 1980 Pre-Subsidence Survey. Refer to Section 6 for photographs.

Feature 29. Bench Marker. This feature is essentially unchanged from how it is described in the Valley Engineering (1980) report, which states the following: "The bench marker is a brass cap that is cemented into a small concrete block. It is marker No. C36 and was established in 1934. Its elevation is 6,027.166 feet MSL."

Feature 30. Breached Reservoir Embankment. This feature has been updated from the Valley Engineering (1980) report. It is the site of a former embankment that created a pond in a large gully. The left and right sides of the embankment remain intact, but the center portion has apparently been eroded away. The embankment remnant is approximately 20 feet tall on the downstream side, and used to span approximately 140 feet across the gully. The remains of a dilapidated drainage diversion structure are located near the top of the embankment on its south side. This structure probably served to convey water to the south through an incised notch for irrigation. The gully bottom was marshy and grassy when it was surveyed (April 2007), and this is due to the fact that irrigation ditches discharge into its headwaters.

Feature 31. Small Shed, Building Foundation, and Corrals. The description of this feature has been updated from the Valley Engineering (1980) report. It contains a cluster of features in poor condition. The shed is constructed of rough lumber and does not have a permanent foundation. It is placed upon rough cut tree limbs and may have been dragged to its current location. There are several gaps in the walls and roofing. A concrete building foundation, located approximately 20 feet southwest of the shed, is cracked on its east side. The corrals are located approximately 600 feet northwest of the shed, and are constructed from wooden fencing with some steel reinforcement. Many of the fence posts and lattices have fallen out of plumb.

Feature 65. Corral and Small Shed. The description of this feature has been updated from the Valley Engineering (1980) report. The corral is constructed of rough cut lumber poles with steel fencing reinforcement. The shed is constructed from rough cut boards, and has masonry reinforcement on the inside walls. The shed is founded on wooden poles. Both the shed and the corral are in fair to poor condition.

Feature 107. Corrals and Covered Shelters. The description of this feature has been updated from the Valley Engineering (1980) report. The corrals and shelters are in poor

condition and are constructed of rough cut lumber and rough sawn boards. Several pieces of the fence are missing. The land slopes steeply downward just to the south of the corrals toward a broad, flat plain. During site reconnaissance in April 2007, a marshy, grassy area was observed near the base of this slope. This marshy area corresponds to SP-9 on Plate VI-2/VI-2A and in the text of Chapter VI Volume 1 Section VI.A.2 (Springs and Seeps) of the Emery Mine Permit (Consolidation Coal Company, 1990). As indicated in that permit document, SP-9 is the result of irrigation water and not a spring.

Feature 108. Corral. The description of this feature has been updated from the Valley Engineering (1980) report. This feature is in fair condition. It is constructed from square rough-cut wood posts, unfinished wood posts, and steel fencing reinforcement. Most of the corral is fenced with barbed wire. During site reconnaissance in April 2007, several hay bales were being stored in the corral, suggesting that it was being used.

2.3 TOPOGRAPHIC SURVEY DATA

Several ground surface elevations were surveyed above the 14th and 15th West Panels by Ware Surveying, LLC in April 2007. The survey effort concentrated on irrigation ditches, power poles, culverts, and roads. The northings, eastings, and elevations of the recorded survey points are summarized in Table 1, and many of these points are shown on Figure 1.

SECTION 3

CONCLUSIONS

This report summarizes pre-subsidence surface conditions for the 14th West and 15th West Panels at the Consolidation Coal Emery Mine, Emery County, Utah. Surface features were inspected and surveyed in April 2007 prior to full extraction of the panel. Although the damage due to subsidence is generally expected to be limited, the greatest potential for adverse effects would likely be disturbances to surface drainage. This is especially true for the irrigation ditches and associated crop lands above the panel. By detailing pre-subsidence conditions in this report, it will be easier to both identify and mitigate negative impacts caused by future subsidence.

SECTION 4
REFERENCES

Consolidation Coal Company, 1990. Emery Mine Permit Act 015/015 Renewal. Chapter VI Volume 1 Section VI.A.3. Submitted to Division of Oil, Gas, and Mining September 9, 1990.

Valley Engineering, Inc., 1980. Consolidation Coal Company, Emery Mine, Presubsidence Survey, Structure and Renewable Resources Descriptions. Division of Oil, Gas, and Mining, Emery Permit 015/015. Chapter V, Vol. 2 of 3.

Consolidation Coal Company
Emery Mine

14th/15th West Pre-Subsidence Survey
April 27, 2007

FIGURE 1

Consolidation Coal Company
Emery Mine

14th/15th West Pre-Subsidence Survey
April 27, 2007

TABLE 1

APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8000	6,761,060.36	1,704,253.49	6,175.91	D
8001	6,761,062.60	1,704,267.86	6,175.77	D
8002	6,761,060.74	1,704,296.48	6,175.75	D
8003	6,761,063.77	1,704,356.34	6,174.87	D
8004	6,761,064.67	1,704,393.58	6,174.61	D
8005	6,761,068.07	1,704,468.05	6,174.49	D
8006	6,761,067.65	1,704,491.35	6,173.65	D FORK
8007	6,761,070.22	1,704,497.02	6,173.41	D GATE
8008	6,761,065.54	1,704,495.70	6,172.98	D GATE
8009	6,761,061.51	1,704,506.51	6,173.65	D
8010	6,761,069.82	1,704,509.74	6,174.65	D
8011	6,761,057.25	1,704,525.65	6,173.49	D
8012	6,761,070.33	1,704,535.37	6,174.46	D
8013	6,761,072.46	1,704,569.93	6,173.22	D
8014	6,761,062.42	1,704,572.54	6,173.32	D
8015	6,761,063.52	1,704,615.62	6,172.51	D FORK
8016	6,761,059.05	1,704,622.68	6,172.05	D
8017	6,761,065.62	1,704,625.42	6,172.42	D
8018	6,761,077.21	1,704,624.78	6,172.19	D
8019	6,761,080.28	1,704,694.34	6,172.19	D
8020	6,761,069.40	1,704,701.50	6,171.58	D
8021	6,761,070.50	1,704,739.11	6,171.20	D END
8022	6,761,081.81	1,704,741.26	6,171.64	D
8023	6,761,079.13	1,704,760.45	6,171.17	D
8024	6,761,079.76	1,704,759.04	6,171.22	D FORK
8025	6,761,083.25	1,704,768.35	6,171.04	D
8026	6,761,073.62	1,704,775.92	6,171.16	D
8027	6,761,075.41	1,704,816.67	6,170.83	D
8028	6,761,085.46	1,704,817.19	6,170.39	D
8030	6,761,086.95	1,704,850.35	6,170.16	D
8031	6,761,078.64	1,704,860.05	6,170.58	D END
8032	6,761,089.66	1,704,895.78	6,169.54	D
8033	6,761,090.31	1,704,903.06	6,169.48	D FORK
8034	6,761,090.90	1,704,916.36	6,169.27	D
8035	6,761,082.23	1,704,916.07	6,168.94	D
8036	6,761,083.12	1,704,952.37	6,168.76	D END
8037	6,761,091.46	1,704,954.04	6,169.00	D FORK
8038	6,761,093.04	1,704,964.67	6,169.00	D
8039	6,761,086.12	1,704,965.23	6,168.31	D
8040	6,761,085.85	1,705,020.29	6,168.15	D
8041	6,761,096.28	1,705,026.20	6,168.08	D
8042	6,761,097.45	1,705,047.92	6,168.03	D FORK
8043	6,761,099.46	1,705,104.50	6,167.48	D

**APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS**

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8044	6,761,100.32	1,705,123.73	6,167.37	D FORK
8045	6,761,106.21	1,705,121.43	6,167.70	D
8046	6,761,104.11	1,705,185.56	6,166.86	D
8047	6,761,103.54	1,705,201.72	6,166.65	D FORK
8048	6,761,106.02	1,705,247.68	6,166.76	D
8049	6,761,112.34	1,705,272.45	6,166.49	D
8050	6,761,107.20	1,705,275.60	6,166.35	D FORK
8051	6,761,110.06	1,705,350.10	6,166.11	D
8052	6,761,109.86	1,705,367.67	6,166.01	D FORK
8053	6,761,113.87	1,705,426.10	6,165.60	D
8054	6,761,117.44	1,705,500.85	6,165.33	D
8055	6,761,121.40	1,705,569.07	6,164.79	D
8056	6,761,123.91	1,705,624.33	6,165.59	D
8057	6,761,125.48	1,705,678.20	6,165.46	D
8058	6,761,125.64	1,705,726.71	6,166.28	D
8059	6,761,126.33	1,705,750.71	6,166.27	D END
8060	6,760,310.73	1,705,727.77	6,154.35	CVRT
8061	6,760,339.43	1,705,682.12	6,154.99	D
8062	6,760,386.52	1,705,613.92	6,155.58	D
8063	6,760,450.02	1,705,519.14	6,156.00	D
8064	6,760,509.21	1,705,433.82	6,157.36	D
8065	6,760,539.74	1,705,387.46	6,157.76	D
8066	6,760,586.47	1,705,318.81	6,157.58	D
8067	6,760,634.79	1,705,248.16	6,159.25	D
8068	6,760,691.46	1,705,163.59	6,160.89	D
8069	6,760,739.87	1,705,092.76	6,162.13	D
8070	6,760,786.82	1,705,023.59	6,162.90	D
8071	6,760,835.01	1,704,952.66	6,164.15	D
8072	6,760,882.35	1,704,882.77	6,165.21	D
8073	6,760,952.28	1,704,780.92	6,166.72	D
8074	6,761,000.33	1,704,709.81	6,168.59	D
8075	6,761,035.43	1,704,657.12	6,170.38	D
8076	6,761,060.10	1,704,620.20	6,172.09	D
8077	6,761,062.03	1,704,415.11	6,175.56	F
8078	6,761,064.12	1,704,415.62	6,175.69	TOP
8079	6,761,068.51	1,704,415.04	6,175.41	TOP
8080	6,761,072.14	1,704,414.59	6,174.67	F
8081	6,761,067.26	1,704,414.46	6,174.41	TOE
8082	6,761,066.20	1,704,413.98	6,174.42	TOE
8083	6,761,060.63	1,704,261.31	6,176.18	D GATE
8084	6,761,056.89	1,704,261.74	6,175.12	D
8085	6,761,053.55	1,704,261.42	6,175.37	D
8086	6,761,051.72	1,704,263.45	6,175.40	D GATE

**APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS**

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8087	6,761,033.74	1,704,267.19	6,175.43	D
8088	6,761,024.55	1,704,267.33	6,174.79	D
8089	6,760,975.90	1,704,264.71	6,174.20	D
8090	6,760,934.04	1,704,273.68	6,173.94	D
8091	6,760,891.75	1,704,275.59	6,172.97	D
8092	6,760,830.99	1,704,276.18	6,172.75	D
8093	6,760,782.51	1,704,280.01	6,172.74	D
8094	6,760,719.95	1,704,278.23	6,171.93	D
8095	6,760,666.90	1,704,279.03	6,170.75	D
8096	6,760,605.77	1,704,279.19	6,170.27	D
8097	6,760,571.47	1,704,281.45	6,168.60	D
8098	6,760,534.85	1,704,294.42	6,168.32	D
8099	6,760,520.47	1,704,301.59	6,168.14	D
8100	6,760,499.76	1,704,327.53	6,168.58	TOP
8101	6,760,503.15	1,704,329.22	6,168.49	TOP
8102	6,760,502.92	1,704,329.49	6,168.03	TOE
8103	6,760,501.76	1,704,328.82	6,168.10	TOE
8104	6,760,455.92	1,704,401.16	6,165.84	D
8105	6,760,424.03	1,704,447.80	6,165.07	D
8106	6,760,407.54	1,704,470.30	6,165.14	D
8107	6,760,394.25	1,704,476.93	6,164.73	D
8108	6,760,388.70	1,704,483.71	6,164.66	D END
8109	6,761,105.40	1,705,292.49	6,167.23	F
8110	6,761,107.29	1,705,292.84	6,166.98	TOP
8111	6,761,110.44	1,705,293.02	6,166.75	TOP
8112	6,761,109.49	1,705,292.85	6,167.06	TOE
8113	6,761,108.36	1,705,292.90	6,166.23	TOE
8114	6,761,112.93	1,705,292.49	6,166.91	F
8115	6,761,144.68	1,706,165.02	6,169.99	D
8116	6,761,142.66	1,706,200.58	6,169.24	D
8117	6,761,147.91	1,706,232.14	6,169.11	D
8118	6,761,144.43	1,706,270.41	6,168.84	D
8119	6,761,146.11	1,706,272.21	6,168.73	TOE
8120	6,761,143.62	1,706,272.47	6,168.94	TOE
8121	6,761,148.60	1,706,273.27	6,171.84	TOP
8122	6,761,151.53	1,706,273.45	6,171.91	F
8123	6,761,136.19	1,706,273.58	6,172.16	F
8124	6,761,141.52	1,706,274.25	6,172.40	TOP
8125	6,761,143.88	1,706,324.62	6,168.41	D
8126	6,761,143.24	1,706,368.40	6,168.23	D
8127	6,761,138.66	1,706,501.86	6,166.76	D
8128	6,761,139.54	1,706,543.54	6,166.20	D
8129	6,761,135.77	1,706,557.36	6,169.12	CVRT

APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8130	6,761,144.44	1,706,557.15	6,169.13	CVRT
8131	6,761,140.89	1,706,561.39	6,166.74	D
8132	6,761,138.67	1,706,603.39	6,166.30	D
8133	6,761,155.80	1,706,145.31	6,169.87	D
8134	6,761,167.50	1,706,112.39	6,171.51	D
8135	6,761,176.86	1,706,083.88	6,172.12	D
8136	6,761,229.31	1,706,030.06	6,175.16	D
8137	6,761,222.90	1,706,026.95	6,177.59	FL 12IN CVRT
8138	6,761,244.24	1,706,027.74	6,177.96	FL 12IN CVRT
8139	6,761,268.03	1,705,983.52	6,175.32	D
8140	6,761,286.60	1,705,962.37	6,175.25	D
8141	6,761,137.99	1,706,621.02	6,167.17	D
8142	6,761,139.83	1,706,723.80	6,165.14	D
8143	6,761,132.81	1,706,761.75	6,167.66	F
8144	6,761,137.63	1,706,760.58	6,168.27	TOP
8145	6,761,142.88	1,706,760.78	6,167.50	TOP
8146	6,761,146.20	1,706,761.25	6,167.76	F
8147	6,761,141.23	1,706,762.17	6,166.38	TOE
8148	6,761,140.01	1,706,762.12	6,165.62	TOE
8149	6,761,140.07	1,706,843.05	6,164.63	D
8150	6,761,134.16	1,706,891.80	6,164.97	D
8151	6,761,114.48	1,706,954.59	6,167.84	D
8152	6,761,117.91	1,707,039.32	6,164.90	D
8153	6,761,115.37	1,707,134.30	6,163.78	D
8154	6,761,113.69	1,707,172.03	6,162.73	D
8155	6,761,103.81	1,707,185.43	6,162.51	FL 24IN CVRT 1
8156	6,761,104.97	1,707,192.56	6,162.52	FL 24IN CVRT 1
8157	6,761,103.10	1,707,184.34	6,162.14	FL 24IN CVRT 2
8158	6,761,096.19	1,707,184.76	6,161.15	FL 24IN CVRT 2
8159	6,761,106.73	1,707,212.74	6,162.28	D
8160	6,761,113.99	1,707,231.47	6,162.02	D GATE
8161	6,761,118.89	1,707,284.12	6,160.91	D
8162	6,761,117.84	1,707,309.79	6,160.40	D
8163	6,761,126.57	1,707,378.96	6,159.21	D
8164	6,761,070.89	1,707,194.07	6,160.35	D
8165	6,761,032.02	1,707,223.63	6,161.11	D
8166	6,760,966.97	1,707,249.66	6,158.29	D
8167	6,760,946.37	1,707,260.17	6,159.60	TOP
8168	6,760,943.94	1,707,255.40	6,159.69	TOP
8169	6,760,944.82	1,707,257.79	6,157.68	TOE
8170	6,760,944.70	1,707,257.93	6,158.01	TOE
8172	6,760,896.65	1,707,269.37	6,155.44	D
8173	6,760,851.21	1,707,273.62	6,154.39	D

**APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS**

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8174	6,760,810.51	1,707,300.23	6,153.45	D
8175	6,760,747.37	1,707,326.95	6,151.38	TOE
8176	6,760,748.01	1,707,328.17	6,151.62	TOE
8177	6,760,746.60	1,707,324.85	6,156.25	TOP
8178	6,760,748.38	1,707,330.62	6,156.48	TOP
8179	6,760,699.68	1,707,334.11	6,150.87	D
8180	6,760,677.25	1,707,343.94	6,150.33	D
8181	6,760,644.17	1,707,345.82	6,150.64	D
8182	6,760,559.51	1,707,379.02	6,147.49	D
8183	6,760,533.54	1,707,386.26	6,147.07	D
8184	6,760,475.07	1,707,392.47	6,146.73	D
8185	6,760,445.25	1,707,398.28	6,146.34	D
8186	6,760,411.30	1,707,433.68	6,145.77	D
8187	6,760,372.31	1,707,479.79	6,145.58	D
8188	6,760,326.47	1,707,522.39	6,144.90	D
8189	6,760,316.84	1,707,529.68	6,144.70	D
8190	6,760,248.77	1,707,393.12	6,141.56	PP
8191	6,760,178.21	1,707,087.32	6,143.79	PP
8192	6,760,115.96	1,706,819.42	6,135.91	PP
8193	6,760,069.36	1,706,612.08	6,143.37	PP
8194	6,759,997.55	1,706,534.61	6,147.31	TOP CONC
8195	6,759,968.11	1,706,541.00	6,147.30	TOP CONC
8196	6,759,964.90	1,706,525.84	6,147.33	TOP CONC
8197	6,759,994.20	1,706,519.33	6,147.43	TOP CONC
8198	6,760,274.74	1,707,509.15	6,144.33	PP 3000 20A
8199	6,760,292.84	1,707,516.14	6,144.55	PP
8201	6,760,265.07	1,707,575.28	6,145.49	PP 114-22-06
8202	6,760,046.04	1,707,529.40	6,138.36	PP 298804
8203	6,759,754.10	1,707,461.73	6,125.70	PP 298700
8204	6,759,460.56	1,707,395.43	6,114.90	PP 298601
8205	6,759,485.42	1,707,340.94	6,104.96	CL RD
8206	6,759,306.51	1,707,304.97	6,088.28	CL RD
8207	6,759,168.89	1,707,270.32	6,074.27	CL RD
8208	6,759,050.72	1,707,232.96	6,062.10	CL RD
8209	6,759,168.22	1,707,328.95	6,059.86	PP 298600
8210	6,758,874.14	1,707,261.53	6,041.29	PP 297501
8211	6,758,859.62	1,707,194.50	6,038.76	FL 18IN CMP
8213	6,758,861.44	1,707,191.57	6,040.64	TOE
8214	6,758,868.43	1,707,182.73	6,047.17	EOA
8215	6,758,879.62	1,707,172.07	6,048.01	CL RD
8216	6,758,886.19	1,707,162.46	6,047.84	EOA
8217	6,758,891.67	1,707,156.52	6,045.18	TOE
8219	6,758,898.57	1,707,148.01	6,041.97	FL CMP

APPENDIX V-4 TABLE 1
PRE-SUBSIDENCE SURVEY POINTS

POINT	NORTHING (ft)	EASTING (ft)	ELEVATION (ft)	DESCRIPTION
8220	6,758,748.34	1,707,126.41	6,040.83	CL RD
8221	6,758,624.78	1,707,076.67	6,035.49	CL RD
8222	6,758,602.94	1,707,132.79	6,029.25	PP 297500
8223	6,758,526.14	1,707,039.20	6,030.98	CL RD
8224	6,758,405.17	1,706,991.23	6,025.38	CL RD
8226	6,758,331.67	1,707,004.60	6,021.49	PP 297400
8227	6,758,285.76	1,706,940.72	6,020.10	CL RD
8228	6,758,139.81	1,706,873.91	6,013.55	CL RD
8229	6,758,074.18	1,706,842.72	6,010.89	CL RD
8230	6,758,059.30	1,706,877.12	6,007.99	PP 297401

Note: Survey points based on NAD83 Datum.

POINT # DITCH "A"	NORTHING	EASTING	ELEVATION	DESCRIPTION
8000	6761060.36	1704253.49	6175.91	D
8084	6761056.89	1704261.74	6175.12	D
8085	6761053.55	1704261.42	6175.37	D
8086	6761051.72	1704263.45	6175.40	D GATE
8087	6761033.74	1704267.19	6175.43	D
8088	6761024.55	1704267.33	6174.79	D
8089	6760975.90	1704264.71	6174.20	D
8090	6760934.04	1704273.68	6173.94	D
8091	6760891.75	1704275.59	6172.97	D
8092	6760830.99	1704276.18	6172.75	D
8093	6760782.51	1704280.01	6172.74	D
8094	6760719.95	1704278.23	6171.93	D
8095	6760666.90	1704279.03	6170.75	D
8096	6760605.77	1704279.19	6170.27	D
8097	6760571.47	1704281.45	6168.60	D
8098	6760534.85	1704294.42	6168.32	D
8099	6760520.47	1704301.59	6168.14	D
8100	6760499.76	1704327.53	6168.58	TOP
8101	6760503.15	1704329.22	6168.49	TOP
8102	6760502.92	1704329.49	6168.03	TOE
8103	6760501.76	1704328.82	6168.10	TOE
8104	6760455.92	1704401.16	6165.84	D
8105	6760424.03	1704447.80	6165.07	D
8106	6760407.54	1704470.30	6165.14	D
8107	6760394.25	1704476.93	6164.73	D
8108	6760388.70	1704483.71	6164.66	D END

DITCH "B"				
8000	6761060.36	1704253.49	6175.91	D
8001	6761062.60	1704267.86	6175.77	D
8002	6761060.74	1704296.48	6175.75	D
8003	6761063.77	1704356.34	6174.87	D
8004	6761064.67	1704393.58	6174.61	D
8005	6761068.07	1704468.05	6174.49	D
8006	6761067.65	1704491.35	6173.65	D FORK
8007	6761070.22	1704497.02	6173.41	D GATE
8010	6761069.82	1704509.74	6174.65	D
8012	6761070.33	1704535.37	6174.46	D
8013	6761072.46	1704569.93	6173.22	D
8018	6761077.21	1704624.78	6172.19	D
8019	6761080.28	1704694.34	6172.19	D
8022	6761081.81	1704741.26	6171.64	D
8024	6761079.76	1704759.04	6171.22	D FORK
8025	6761083.25	1704768.35	6171.04	D
8028	6761085.46	1704817.19	6170.39	D
8030	6761086.95	1704850.35	6170.16	D
8032	6761089.66	1704895.78	6169.54	D
8033	6761090.31	1704903.06	6169.48	D FORK
8034	6761090.90	1704916.36	6169.27	D
8037	6761091.46	1704954.04	6169.00	D FORK

8038	6761093.04	1704964.67	6169.00	D
8041	6761096.28	1705026.20	6168.08	D
8042	6761097.45	1705047.92	6168.03	D FORK
8043	6761099.46	1705104.50	6167.48	D
8044	6761100.32	1705123.73	6167.37	D FORK
8046	6761104.11	1705185.56	6166.86	D
8047	6761103.54	1705201.72	6166.65	D FORK
8048	6761106.02	1705247.68	6166.76	D
8049	6761112.34	1705272.45	6166.49	D
8050	6761107.20	1705275.60	6166.35	D FORK
8051	6761110.06	1705350.10	6166.11	D
8052	6761109.86	1705367.67	6166.01	D FORK
8053	6761113.87	1705426.10	6165.60	D
8054	6761117.44	1705500.85	6165.33	D
8055	6761121.40	1705569.07	6164.79	D
8056	6761123.91	1705624.33	6165.59	D
8057	6761125.48	1705678.20	6165.46	D
8058	6761125.64	1705726.71	6166.28	D
8059	6761126.33	1705750.71	6166.27	D END
8077	6761062.03	1704415.11	6175.56	F
8078	6761064.12	1704415.62	6175.69	TOP
8079	6761068.51	1704415.04	6175.41	TOP
8080	6761072.14	1704414.59	6174.67	F
8081	6761067.26	1704414.46	6174.41	TOE
8082	6761066.20	1704413.98	6174.42	TOE
8083	6761060.63	1704261.31	6176.18	D GATE
8109	6761105.40	1705292.49	6167.23	F
8110	6761107.29	1705292.84	6166.98	TOP
8111	6761110.44	1705293.02	6166.75	TOP
8112	6761109.49	1705292.85	6167.06	TOE
8113	6761108.36	1705292.90	6166.23	TOE
8114	6761112.93	1705292.49	6166.91	F

DITCH "C"

8006	6761067.65	1704491.35	6173.65	D FORK
8008	6761065.54	1704495.70	6172.98	D GATE
8009	6761061.51	1704506.51	6173.65	D
8011	6761057.25	1704525.65	6173.49	D
8014	6761062.42	1704572.54	6173.32	D
8015	6761063.52	1704615.62	6172.51	D FORK
8016	6761059.05	1704622.68	6172.05	D
8060	6760310.73	1705727.77	6154.35	CVRT
8061	6760339.43	1705682.12	6154.99	D
8062	6760386.52	1705613.92	6155.58	D
8063	6760450.02	1705519.14	6156.00	D
8064	6760509.21	1705433.82	6157.36	D
8065	6760539.74	1705387.46	6157.76	D
8066	6760586.47	1705318.81	6157.58	D
8067	6760634.79	1705248.16	6159.25	D
8068	6760691.46	1705163.59	6160.89	D
8069	6760739.87	1705092.76	6162.13	D
8070	6760786.82	1705023.59	6162.90	D

8071	6760835.01	1704952.66	6164.15	D
8072	6760882.35	1704882.77	6165.21	D
8073	6760952.28	1704780.92	6166.72	D
8074	6761000.33	1704709.81	6168.59	D
8075	6761035.43	1704657.12	6170.38	D
8076	6761060.10	1704620.20	6172.09	D

DITCH "D"

8115	6761144.68	1706165.02	6169.99	D
8116	6761142.66	1706200.58	6169.24	D
8117	6761147.91	1706232.14	6169.11	D
8118	6761144.43	1706270.41	6168.84	D
8119	6761146.11	1706272.21	6168.73	TOE
8120	6761143.62	1706272.47	6168.94	TOE
8121	6761148.60	1706273.27	6171.84	TOP
8122	6761151.53	1706273.45	6171.91	F
8123	6761136.19	1706273.58	6172.16	F
8124	6761141.52	1706274.25	6172.40	TOP
8125	6761143.88	1706324.62	6168.41	D
8126	6761143.24	1706368.40	6168.23	D
8127	6761138.66	1706501.86	6166.76	D
8128	6761139.54	1706543.54	6166.20	D
8129	6761135.77	1706557.36	6169.12	CVRT
8130	6761144.44	1706557.15	6169.13	CVRT
8131	6761140.89	1706561.39	6166.74	D
8132	6761138.67	1706603.39	6166.30	D
8133	6761155.80	1706145.31	6169.87	D
8134	6761167.50	1706112.39	6171.51	D
8135	6761176.86	1706083.88	6172.12	D
8136	6761229.31	1706030.06	6175.16	D
8137	6761222.90	1706026.95	6177.59	FL 12IN CVRT
8138	6761244.24	1706027.74	6177.96	FL 12IN CVRT
8139	6761268.03	1705983.52	6175.32	D
8140	6761286.60	1705962.37	6175.25	D
8141	6761137.99	1706621.02	6167.17	D
8142	6761139.83	1706723.80	6165.14	D
8143	6761132.81	1706761.75	6167.66	F
8144	6761137.63	1706760.58	6168.27	TOP
8145	6761142.88	1706760.78	6167.50	TOP
8146	6761146.20	1706761.25	6167.76	F
8147	6761141.23	1706762.17	6166.38	TOE
8148	6761140.01	1706762.12	6165.62	TOE
8149	6761140.07	1706843.05	6164.63	D
8150	6761134.16	1706891.80	6164.97	D
8151	6761114.48	1706954.59	6167.84	D
8152	6761117.91	1707039.32	6164.90	D
8153	6761115.37	1707134.30	6163.78	D
8154	6761113.69	1707172.03	6162.73	D
8155	6761103.81	1707185.43	6162.51	FL 24IN CVRT 1
8156	6761104.97	1707192.56	6162.52	FL 24IN CVRT 1
8159	6761106.73	1707212.74	6162.28	D
8160	6761113.99	1707231.47	6162.02	D GATE

8161	6761118.89	1707284.12	6160.91	D
8162	6761117.84	1707309.79	6160.40	D
8163	6761126.57	1707378.96	6159.21	D

DITCH "E"

8154	6761113.69	1707172.03	6162.73	D
8157	6761103.10	1707184.34	6162.14	FL 24IN CVRT 2
8158	6761096.19	1707184.76	6161.15	FL 24IN CVRT 2
8164	6761070.89	1707194.07	6161.90	D
8165	6761032.02	1707223.63	6162.66	D
8166	6760966.97	1707249.66	6159.84	D
8167	6760946.37	1707260.17	6161.15	TOP
8168	6760943.94	1707255.40	6161.24	TOP
8169	6760944.82	1707257.79	6159.23	TOE
8170	6760944.70	1707257.93	6159.56	TOE
8172	6760896.65	1707269.37	6155.44	D
8173	6760851.21	1707273.62	6154.39	D
8174	6760810.51	1707300.23	6153.45	D
8175	6760747.37	1707326.95	6151.38	TOE
8176	6760748.01	1707328.17	6151.62	TOE
8177	6760746.60	1707324.85	6156.25	TOP
8178	6760748.38	1707330.62	6156.48	TOP
8179	6760699.68	1707334.11	6150.87	D
8180	6760677.25	1707343.94	6150.33	D
8181	6760644.17	1707345.82	6150.64	D
8182	6760559.51	1707379.02	6147.49	D
8183	6760533.54	1707386.26	6147.07	D
8184	6760475.07	1707392.47	6146.73	D
8185	6760445.25	1707398.28	6146.34	D
8186	6760411.30	1707433.68	6145.77	D
8187	6760372.31	1707479.79	6145.58	D
8188	6760326.47	1707522.39	6144.90	D
8189	6760316.84	1707529.68	6144.70	D

Consolidation Coal Company
Emery Mine

14th/15th West Pre-Subsidence Survey
April 27, 2007

SITE PHOTOGRAPHS



Feature 30. Breached Reservoir Embankment. Looking south. Note diversion structure and deeply incised ditch on south side of gully.



Feature 30. Breached Reservoir Embankment. Looking east at the south side of the embankment.



Feature 30. Breached Reservoir Embankment. Looking west up the gully from near the breached embankment. The bottom of the gully is marshy and grassy due to irrigation ditches discharging into the gully at its upstream end.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking southeast at shed.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking east at shed.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking north at shed.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking west at shed.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking east at power lines that lead from the paved road to the shed.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking south at foundation.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking north at foundation.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking at crack near northeast corner of foundation.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking southwest at foundation.
Note crack.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking east at corral.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking southeast at corral.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking northwest at corral.



Feature 31. Small Shed, Building Foundation, and Corrals. Looking south at corral.



Feature 65. Corral and Small Shed. Looking northeast at the shed.



Feature 65. Corral and Small Shed. Looking south at the shed.



Feature 65. Corral and Small Shed. Looking west into the shed.



Feature 65. Corral and Small Shed. Looking at the north wall of the corral.



Feature 65. Corral and Small Shed. Looking at the south wall of the corral.



Southeast of Feature 65. Photo looking southeast at irrigation ditch and culvert. Approximate location of photo is UTM E 476,621 m, N 4,303,607 m (WGS 84 Datum).



West of Feature 65 looking east along irrigation ditch. Feature 65 is visible near the horizon on the left of the photograph.



West of Feature 65 looking east along irrigation ditch. Feature 65 is visible near the horizon on the left of the photograph. This photograph was taken from just northwest of the previous photograph. Note ponding left (north) of the ditch.



Photograph looking west-northwest at irrigation ditch. This ditch is located west of Feature 31 and eventually feeds the drainage in which Feature 30 is located. The approximate location of where this photograph was taken is UTM E 476,353 m, N 4,303,446 m (WGS 84 Datum).



Photograph looking east-southeast at the same irrigation ditch as in the previous photograph. The photograph was taken from the same location as the previous photograph.



Feature 107. Corrals and Covered Shelters. Looking south at west portion of corral and covered shelter.



Feature 107. Corrals and Covered Shelters. Looking southeast at east portion of corral and covered shelter.



Feature 107. Corrals and Covered Shelters. Looking southwest at covered shelter.



Feature 107. Corrals and Covered Shelters. Looking east along northern edge of corral.



Feature 107. Corrals and Covered Shelters. Looking southwest at marshy, grassy area below and south of the corral and covered shelters. (Photo taken April 2007)



Feature 108. Corral. Looking South.



Feature 108. Corral. Looking east.



Photograph looking south from the intersection of the paved road with the two unimproved roads just north of the area boundary.



Photograph looking south along the paved road that crosses the site area. The Consol Mine road can be seen in the distance. Note that some of the power poles lean slightly leftward.

CHAPTER VIII
APPENDIX VIII-3

VEGETATION
of the
4TH EAST, 6TH WEST, &
14TH/15TH WEST AREAS

at the
EMERY MINE SITE

for
CONSOL ENERGY



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VEGETATION
of the
4TH EAST, 6TH WEST, &
14TH/15TH WEST AREAS

INTRODUCTION

Consolidation Coal Company (Consol) has plans to continue their underground coal mining operations to other areas of the Emery Mine. Because full extraction mining methods will be employed, some subsidence on the ground surface is anticipated.

Vegetation maps have been prepared and included in this report that show the surface locations directly above the new mining operations (Figures 1 and 2). A discussion about the plant communities in the study areas, as well as the potential for the occurrence of threatened or endangered species, have also been included in this document.

METHODS

Field work was conducted in the new areas on February 28, March 1, and March 15, 2007. The field work included recording qualitative data, surveying for potential sensitive species habitats, and plant community mapping.

Potential threatened and endangered species lists were compiled after consulting previously

with the U.S. Fish & Wildlife Service, Salt Lake City, Utah and files located at *Mt. Nebo Scientific, Inc.*, Springville, Utah.

RESULTS

PLANT COMMUNITIES

Table 1 lists the plant communities of the study areas and indicates where they can be found.

Table 1: Plant Communities of the Study Areas.

PLANT COMMUNITY	6 TH WEST	4 TH EAST	14 TH /15 TH WEST
Shadscale	X	X	X
Greasewood	X	X	X
Saltgrass		X	X
Tamarisk		X	
Cattail/Saltgrass			X
Mat Saltbush			X
Greasewood/Tamarisk			X
Pasture Land (dry)	X		X
Pasture Land (irrigated)	X		X
Barren			X

Shadscale

A Shadscale plant community occupied portions of all three study areas. As the community name suggests, this community was dominated by shadscale (*Atriplex confertifolia*), but several other species of shrubs, forbs, and grasses can also be common in this community.

Greasewood

Greasewood communities can also be found in all three study areas. This community is known for its relatively low species diversity with the dominant plant species comprised of greasewood (*Sarcobatus vermiculatus*) and, to a lesser extent, Torrey's seepweed (*Suaeda torreyana*).

Saltgrass

The lower elevation topography of the study areas was often comprised of a Saltgrass community. The water that flows within these areas is often derived from natural groundwater and surface water as well as runoff from irrigated pasture lands up-gradient. The dominant species in these communities was often almost exclusively comprised of saltgrass (*Distichlis spicatus*). However, there were other saltgrass areas that were comprised of additional species that were represented as co-dominants; these communities were separated

on the vegetation maps and also described separately in this report.

Tamarisk

Tamarisk, or salt cedar (*Tamarisk chinensis*), is a non-native plant that has become a problem in Utah because it out-competes and often displaces other native species. A native of Eurasia, it was once cultivated as an ornamental and has become naturalized along seeps, streams, and reservoirs in our area. Nearly pure stands of tamarisk have become established in some locations of the study areas. These areas were often in wetter areas where previous land disturbance has impacted the native plant communities (i.e. removal of native species to increase pasture land).

Cattail/Saltgrass

Some of the most wet sites in 14th/15th West area were comprised of a plant community where the dominant two species were cattail (*Typha domingensis*) and saltgrass.

Mat Saltbush

Some areas, particularly in the 14th/15th West area, had a plant community that was almost exclusively mat saltbush (*Atriplex corrugata*). These were lo sloped areas of clay soils, that are often sodic and saline.

Greasewood/Tamarisk

Another plant community was separated on the vegetation maps because it had two dominant plant species – greasewood and tamarisk. This community was found in the 14th/15th West study area.

Pasture Lands

Some of the lower elevation areas have been converted to pasture land. A portion of the pasture lands are currently irrigated; others had been irrigated in the past and are currently dry-farmed. This differentiation was also delineated on the vegetation map included in this report.

Barren

Although not a plant community, a characterization called “Barren” was delineated on the vegetation maps. These areas were nearly devoid of vegetation, but probably have a few annual and perennial species that can be observed when adequate precipitation events occur.

Threatened and Endangered Species

There are several federally listed plant species that are known to occur in Emery County, Utah (Table 2). It is unlikely, but possible, that some of these species may occur in the study areas.

The most likely plant communities for such occurrences would be the shadscale and mat saltbush communities. A sensitive species survey could be conducted in these areas if required by the State of Utah,

Division of Oil, Gas &

Mining (DOGM). Timing

for the surveys should be in

the spring ranging from

late-April through May.

Table 2: Potential Threatened or Endangered Plant Species in the Study Areas of the Emery Mine

Scientific Name	Common Name	Status
<i>Pediocactus winkleri</i>	Winkler Footcactus	T
<i>Pediocactus despainii</i>	Despain Footcactus	E
<i>Schoenocrambe barnebyi</i>	Barneby's schoenocrambe	E
<i>Sclerocactus wrightiae</i>	Wright Fishhook Cactus	E
<i>Townsendia aprica</i>	Last Chance Townsendia	T
<i>Erigeron maguirei</i>	Maguire Daisy	T
<i>Cycladenia humilis var. jonesii</i>	Jones Cycladenia	T

E = Federal Protection, Endangered

T = Federal Protection, Threatened

COLOR PHOTOGRAPHS
of the
PLANT COMMUNITIES



Photo 1: Shadscale

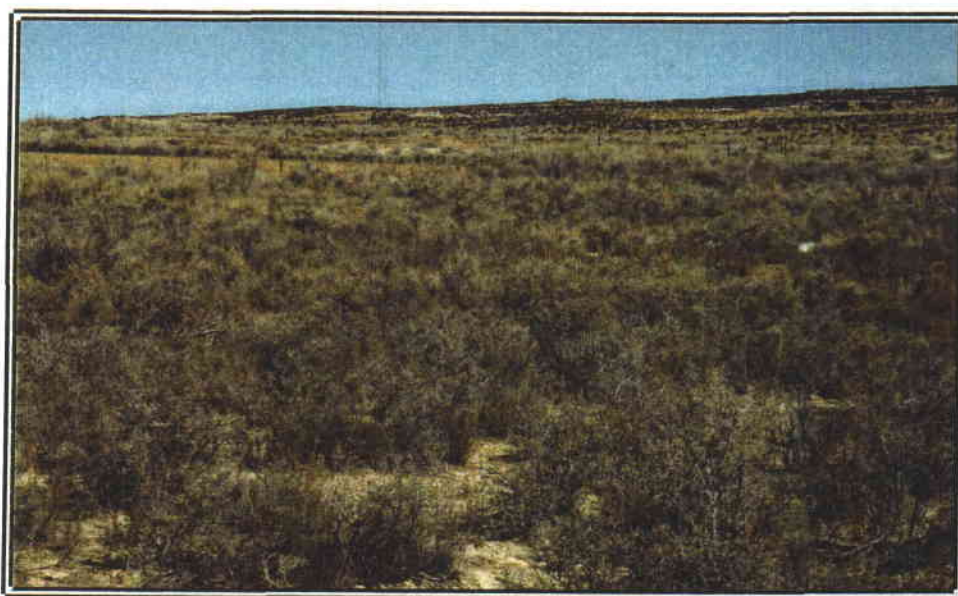


Photo 2: Greasewood



Photo 3: Saltgrass



Photo 4: Tamarisk



Photo 5: Cattail/Saltgrass



Photo 6: Mat Saltbush



Photo 7: Greasewood/Tamarisk



Photo 8: Pasture Land (dry, typical)